

THAT WHICH IS CLAIMED IS:

1. An isolated nucleic acid selected from the group consisting of  
a nucleic acid encoding erythropoietin receptor isoform 1 and having the  
sequence given herein as **SEQ ID NO: 4**;  
5 a nucleic acid encoding erythropoietin receptor isoform 2 and having the  
sequence given herein as **SEQ ID NO: 6**;  
a nucleic acid encoding erythropoietin receptor isoform 3 and having the  
sequence given herein as **SEQ ID NO: 8**;  
a nucleic acid encoding erythropoietin receptor isoform 4 and having the  
10 sequence given herein as **SEQ ID NO: 10**;  
a nucleic acid encoding erythropoietin receptor isoform 5 and having the  
sequence given herein as **SEQ ID NO: 12**;  
a nucleic acid that encodes the opposite strand of a nucleic acid as set forth  
above.  
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2. The nucleic acid according to claim 1 encoding erythropoietin receptor  
isoform 1 and having the sequence given herein as **SEQ ID NO: 4**.
3. The nucleic acid according to claim 1 encoding erythropoietin receptor  
20 isoform 2 and having the sequence given herein as **SEQ ID NO: 6**.
4. The nucleic acid according to claim 1 encoding erythropoietin receptor  
isoform 3 and having the sequence given herein as **SEQ ID NO: 8**.
- 25 5. The nucleic acid according to claim 1 encoding erythropoietin receptor  
isoform 4 and having the sequence given herein as **SEQ ID NO: 10**.
6. The nucleic acid according to claim 1 encoding erythropoietin receptor  
isoform 5 and having the sequence given herein as **SEQ ID NO: 12**.  
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7. The nucleic acid according to claim 1, wherein said nucleic acid is an  
RNA.

8. A recombinant nucleic acid comprising a promoter operatively associated with a nucleic acid according to claim 1.

9. A host cell containing a recombinant nucleic acid according to claim 8 and  
5 which expresses the encoded erythropoietin receptor isoform.

10. An isolated protein encoded by a nucleic acid according to claim 1.

11. An antibody that selectively binds to a protein according to claim 10.

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12. The antibody according to claim 11 coupled to a detectable group.

13. The antibody according to claim 11 coupled to a solid support.

14. The antibody according to claim 11, wherein said antibody is a  
15 monoclonal antibody.

15. The antibody according to claim 11, wherein said antibody is a polyclonal  
antibody.

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16. An oligonucleotide probe that specifically binds to a nucleic acid  
according to claim 1.

17. A method of screening a subject for cancer, comprising:

25 detecting the presence or absence of a nucleic acid according to claim 1 in said  
subject,

the presence of such a nucleic acid indicating said subject is afflicted with or  
at risk of developing cancer.

18. The method according to claim 17, wherein said cancer is breast, cervix,  
30 colon, lung, ovarian or prostate cancer.

19. The method according to claim 17, wherein said detecting step is carried out by collecting a biological sample from said subject, and then detecting the presence or absence of said nucleic acid in said biological sample.

5           20. A method of screening a subject for cancer, comprising:  
          detecting the presence or absence of a protein encoded by a nucleic acid according to claim 1 in said subject,  
          the presence of such a protein indicating said subject is afflicted with or at risk of developing cancer.

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          21. The method according to claim 20, wherein said cancer is breast, cervix, colon, lung, ovarian or prostate cancer.

          22. The method according to claim 20, wherein said detecting step is carried  
15 out by collecting a biological sample from said subject, and then detecting the presence or absence of said protein in said biological sample.

          23. The method according to claim 20, wherein said detecting step is carried out by immunoassay.

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          24. The method according to claim 20, wherein said detecting step is carried out by detecting nucleic acid that encodes said protein.